raise any new issue requiring further search and/or consideration (since the amendments amplify issues previously discussed throughout prosecution); (c) satisfy a requirement of form asserted in the previous Office Action; and (d) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

I. The Claims Satisfy the Requirements of 35 U.S.C. §112, Second Paragraph

The Office Action rejects claims 26-29 under 35 U.S.C. §112, second paragraph, as indefinite. Claims 26-29 are amended to obviate the rejection. Withdrawal of the rejection under 35 U.S.C. §112, second paragraph, is respectfully requested.

II. The Claims Define Allowable Subject Matter

The Office Action rejects claims 1-3, 5, 6, 9, 11-15, 17-21, 23-33 and 36-40 under 35 U.S.C. §102(e) as unpatentable over U.S. Patent No. 5,895,692 to Shirasaki et al. (hereinafter "Shirasaki"); claims 10, 22, 34 and 35 under 35 U.S.C. §103 as unpatentable over Shirasaki; claims 4 and 16 under 35 U.S.C. §103 as unpatentable over Shirasaki in view of U.S. Patent No. 5,317,169 to Nakano et al. (hereinafter "Nakano"); and claims 7, 8, 19, 20 and 28 under 35 U.S.C. §103 as unpatentable over Shirasaki in view of U.S. Patent No. 6,013,982 to Thompson et al. (hereinafter "Thompson"). The rejections are respectfully traversed.

In Shirasaki et al., after the fluorescent pigments (R, G, B) are applied on the hole transport layer 16 by the ink-jet method, the luminescent layers 13a, 13b and 13c are formed through (by way of) the diffusion step (the fluorescent pigments are heated to be diffused). The shape and position of the final luminescent layers 13a, 13b and 13c are not yet finally fixed at the time when the fluorescent pigment (R, G, B) layers have been formed by the ink-jet method. In more detail, the fluorescent pigments (R, G, B) diffuse or spread not only horizontally but also vertically after they are formed by the ink-jet method due to the diffusion step.

Therefore, the fluorescent pigments (R, G, B) which are formed by the ink-jet method do not constitute a final pattern like the claimed invention. In other words, the fluorescent pigments (three kinds of pigment) (R, G, B) are different from the luminescent layers 13a, 13b and 13c of the claimed invention in their shapes and positions.

In contrast, in accordance with the claimed invention, the materials discharged by the ink-jet method (or discharged from the nozzle) form a final pattern (respective pixel luminescent layers of the luminescent layer have a predetermined shape and are arranged in a predetermined order) of pixel luminescent layers substantially at those positions (that is, respective pixel luminescent layers of the luminescent layer have a predetermined shape and are arranged in a predetermined order).

In fact, the independent claims recite that the luminescent layer is formed such that the disposition of the lower surface of the luminescent layer remains static relative to the first electrodes subsequent to the luminescent layer being formed by the ink jet method and at least until the method of manufacturing the organic EL device is complete. Shirasaki clearly does not disclose this claimed feature. For example, as shown in Fig. 7B of Shirasaki, the fluorescent pigments R, G, B are formed on top of the single hole transport layer 16. However, as shown in Fig. 8B, the fluorescent pigments R, G, B subsequently merge into the single hole transport layer 16 so as to form red, green and blue luminescent portions 13a, 13b and 13c. Thus, the lower surface of the fluorescent pigments R, G, B does not remain static relative to the transparent electrode 12 subsequent to the fluorescent pigments R, G, B being formed. In fact, the lower surface of the fluorescent pigments R, G, B moves toward the transparent electrode 12 subsequent to formation of the fluorescent pigments R, G, B.

Nagano does not make up for the deficiencies discussed above.

Further, Thompson does not even constitute prior art. For example, the Japanese patent application from which this application claims priority was filed on November 25, 1996, which predates the effective prior art date of Thompson.

For at least these reasons, it is respectfully submitted that the claims are distinguishable over the applied art. Withdrawal of the rejections under 35 U.S.C. §102 and §103 is respectfully requested.

III. Conclusion

For at least the reasons discussed above, it is respectfully submitted that this application is in condition for allowance.

Should the Examiner believe that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed above.

Respectfully submitted,

James A. Oliff
Registration No. 27,075

Eric D. Morehouse
Registration No. 38,565

JAO:EDM:BMH/gam

Attachment:
Appendix

Date: December 26, 2001

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461

APPENDIX

Changes to Claims:

The following are marked-up versions of the amended claims:

1. (Twice Amended) A method of manufacturing an organic EL ~~element~~device, comprising the steps of:

forming ~~pixel~~ first electrodes on or above a ~~transparent~~ substrate;

forming at least one luminescent layer defining a lower surface facing the first electrodes and having a certain color and made of an organic compound on or above ~~predetermined pixel~~ first electrodes ~~in the pixel electrodes~~ by patterning, said at least one luminescent layer including a plurality of pixel luminescent layers respectively provided on or above the predetermined ~~pixel~~ first electrodes; and

forming a ~~counter~~ second electrode opposing the ~~pixel~~ first electrodes,

~~wherein~~ the formation of said at least one luminescent layer ~~is~~ being performed by means of an ink-jet method so that a thus formed luminescent layer can be used as a final pattern in which the respective pixel luminescent layers of the luminescent layer have a predetermined shape and are arranged in a predetermined order, such that the disposition of the lower surface of the at least one luminescent layer remains static relative to the first electrodes subsequent to the luminescent layer being formed by the ink-jet method and at least until the method of manufacturing the organic EL device is complete.

2. (Amended) The method of manufacturing an organic EL ~~element~~ device as claimed in claim 1, ~~wherein~~ the organic compound ~~is~~ being a polymer organic compound.

3. (Twice Amended) The method of manufacturing an organic EL element as claimed in claim 2, ~~wherein~~ the polymer organic compound ~~is~~ being a material having functions of hole injection and hole transfer.

4. (Twice Amended) The method of manufacturing an organic EL ~~element~~device as claimed in claim 2, ~~wherein~~ the polymer organic compound ~~is~~ being a polyparaphenylene vinylene or its derivative or a copolymer which contains at least either one of these compounds.

5. (Three Times ~~Twice~~ Amended) The method of manufacturing an organic EL ~~element~~ device as claimed in claim 1, ~~wherein~~ said at least one luminescent layer includes three types of luminescent layers having different colors, and wherein at least two types of luminescent layers in the three types of luminescent layers ~~are~~ being formed by patterning by means of the ink-jet method.

6. (Twice Amended) The method of manufacturing an organic EL ~~element~~ device as claimed in claim 5, ~~wherein~~ said different colors include red, green and blue, and the red luminescent layer and the green luminescent layer ~~are~~ being formed by patterning by means of the ink-jet method.

7. (Amended) The method of manufacturing an organic EL ~~element~~ device as claimed in claim 6, ~~wherein~~ the blue luminescent layer ~~is~~ being formed by a vacuum deposition method.

8. (Twice Amended) The method of manufacturing an organic EL ~~element~~ device as claimed in claim 7, ~~wherein~~ the blue luminescent layer ~~is~~ being made of a material having functions of electron injection and electron transfer.

9. (Three Times ~~Twice~~ Amended) The method of manufacturing an organic EL ~~element~~ device as claimed in claim 1, ~~wherein~~ said at least one luminescent layer ~~is laminated onto~~ being formed on or above a hole injection and transfer layer.

10. (Three Times ~~Twice~~ Amended) The method of manufacturing an organic EL element as claimed in claim 1, further comprising the step of forming a protective film on or above the ~~counter~~ second electrode.

11. (Three Times ~~Twice~~ Amended) The method of manufacturing an organic EL ~~element~~ device as claimed in claim 1, further comprising the step of forming on or above said ~~transparent~~ substrate electrodes for driving the respective pixels.

12. (Twice Amended) The method of manufacturing an organic EL ~~element~~device as claimed in claim 1, ~~wherein~~ said ~~pixel~~ first electrodes ~~are~~ being transparent ~~pixel~~ first electrodes.

13. (Twice Amended) An organic EL ~~element~~device, comprising:

a ~~transparent~~ substrate;

~~pixel~~ first electrodes provided on or above the ~~transparent~~ substrate;

at least one luminescent ~~layers~~layer defining a lower surface facing the first electrodes, each of which includes a plurality of pixel luminescent layers respectively formed on or above predetermined ~~pixel~~ first electrodes ~~in the pixel electrodes~~ and each of which has a certain color and is made of an organic compound, ~~wherein at least one of~~ the luminescent layers ~~is~~ being formed on or above the ~~predetermined pixel~~ first electrodes by patterning by means of an ink-jet system so that a thus formed luminescent layer can be used as a final pattern in which the respective pixel luminescent layers of the luminescent layer have a predetermined shape and are arranged in a predetermined order, such that the disposition of the lower surface of the at least one luminescent layer remains static relative to the first electrodes subsequent to the luminescent layer being formed by the ink-jet method and at least until a method of manufacturing the organic EL device is complete; and

a ~~counter~~ second electrode formed on or above the luminescent layers.

14. (Amended) The organic EL ~~element~~device, as claimed in claim 13, ~~wherein~~ the organic compound ~~is~~ being a polymer organic compound.

15. (Twice Amended) The organic EL ~~element~~ device as claimed in claim 14, ~~wherein~~ the polymer organic compound ~~is~~ being a material having functions of hole injection and hole transfer.

16. (Twice Amended) The organic EL ~~element~~ device as claimed in claim 14, wherein the polymer organic compound ~~is~~ being a polyparaphenylene vinylene or its derivative or a copolymer which contains at least either one of these compounds.

17. (Three Times ~~Twice~~ Amended) The organic EL ~~element~~ device as claimed in claim 13, ~~wherein~~ said at least one luminescent layer comprises three luminescent layers having different colors, and at least two luminescent layers in the three luminescent layers ~~are~~ being formed by patterning by means of an ink-jet method.

18. (Twice Amended) The organic EL ~~element~~ device as claimed in claim 17, ~~wherein~~ said different colors include red, green and blue, and the red luminescent layer and the green luminescent layer ~~are~~ being patterned by means of the ink-jet method.

19. (Twice Amended) The organic EL ~~element~~ device as claimed in claim 13, wherein the blue luminescent layer is formed by a vacuum deposition method.

20. (Twice Amended) The organic EL ~~element~~ device as claimed in claim 19, ~~wherein~~ the blue luminescent layer ~~is~~ being made of a material having functions of electron injection and electron transfer.

21. (Three Times ~~Twice~~ Amended) The organic EL ~~element~~ device as claimed in claim 13, ~~wherein~~ said at least one luminescent layer ~~is laminated onto~~ being formed on or above a material having functions of electron injection and electron transfer.

22. (Three Times ~~Twice~~ Amended) The organic EL ~~element~~ device as claimed in claim 13, further comprising a protective film formed on or above the ~~counter~~ second electrode.

23. (Twice Amended) The organic EL ~~element~~ device as claimed in claim 13, ~~wherein~~ said ~~pixel~~ first electrodes ~~are~~ being transparent ~~pixel~~ first electrodes.

24. (Twice Amended) ~~An organic EL~~ A display ~~device~~ comprising the organic EL ~~element~~ device as claimed in claim 23.

25. (Amended) A method of manufacturing an organic EL ~~element~~device, comprising the steps of:

forming ~~pixel~~ first electrodes on or above a ~~transparent~~ substrate;

forming three types of luminescent layers on or above said ~~pixel~~ first electrodes by patterning, each of said luminescent layers having a certain color and made of an organic compound, and ~~wherein each of the luminescent layers includes~~ including respectively a plurality of pixel luminescent layers formed on or above predetermined ~~pixel~~ first electrodes ~~in the pixel electrodes~~, at least two of the luminescent layers each defining a lower surface facing the first electrodes; and

forming a ~~counter~~ second electrode opposing the ~~pixel~~ first electrodes,

~~wherein~~ the formation of the at least two of the luminescent layers ~~is~~ being performed by means of an ink-jet method so that thus formed luminescent layers can be used as a final pattern in which the respective pixel luminescent layers of the luminescent layers have substantially a predetermined shape and are arranged in a predetermined order, such that the disposition of the lower surfaces of the at least two luminescent layers remains static relative to the first electrodes subsequent to the luminescent layer being formed by the ink-jet method and at least until the method of manufacturing the organic EL device is complete.

26. (Amended) The ~~organic EL element~~ method as claimed in claim 25, ~~wherein~~ said three luminescent layers have three different colors, respectively, and at least two luminescent layers in the three luminescent layers ~~are~~ being formed by patterning by means of the ink-jet method.

27. (Amended) The ~~organic EL element~~ method as claimed in claim 26, ~~wherein~~ said three different colors include red, green and blue, and the red luminescent layer and the green luminescent layer ~~are~~ being patterned by means of the ink-jet method.

28. (Amended) The ~~organic EL element~~ method as claimed in claim 27, ~~wherein~~ the blue luminescent layer ~~is~~ being formed by a vacuum deposition method.

29. (Amended) The ~~organic EL element~~ method as claimed in claim 27, ~~wherein~~ the blue luminescent layer ~~is~~ being formed by means of the ink-jet method.

30. (Amended) A method of manufacturing an organic EL ~~element~~device, comprising the steps of:

forming ~~pixel~~ first electrodes on or above a ~~transparent~~ substrate;

forming a first luminescent ~~layers~~ layer defining a lower surface facing the first electrodes and having a first color and made of a first organic compound on or above first predetermined ~~pixel~~ first electrodes ~~in the pixel electrodes, respectively,~~ by patterning; and

forming a ~~counter~~ second electrode opposing the ~~pixel~~ first electrodes,

~~wherein~~ the formation of said first luminescent ~~layers is~~ layer being performed by means of an ink-jet method so that thus formed luminescent ~~layers~~ layer can be used as a final pattern in which the ~~respective~~ luminescent ~~layers~~ layer on or above the predetermined ~~pixel~~ first electrodes ~~have~~ has substantially a predetermined shape and ~~are~~ is arranged in a predetermined order, such that the disposition of the lower surface of the first luminescent layer remains static relative to the first electrodes subsequent to the luminescent layer being formed by the ink-jet method and at least until the method of manufacturing the organic EL device is complete.

31. (Amended) The method as claimed in claim 30, further comprising a step of forming a second luminescent ~~layers~~ layer having a second color which is different from the

first color and made of a second organic compound on or above second predetermined ~~pixel~~ first electrodes in the ~~pixel~~ first electrodes, respectively, by patterning,

~~wherein~~ the formation of said second luminescent ~~layers~~ layer is performed by means of the ink-jet method so that thus formed second luminescent ~~layers~~ layer can be used as a final pattern in which the respective second luminescent layers on or above the respective second ~~pixel~~ first electrodes have a predetermined shape and ~~are~~ is arranged in a predetermined order.

32. (Amended) The method as claimed in claim 31, further comprising a step of forming third luminescent ~~layers~~ layer having a third color that is different from the first and second colors and made of a third organic compound on or above third predetermined ~~pixel~~ first electrodes in the ~~pixel~~ first electrodes, respectively, ~~wherein~~ the formation of the third luminescent ~~layers is~~ layer being carried out by the ink-jet method.

33. (Amended) The method as claimed in claim 31, further comprising a step of forming a third luminescent ~~layers~~ layer having a third color which is different from the first and second colors and made of a third organic compound on or above third predetermined ~~pixel~~ first electrodes in the ~~pixel~~ first electrodes, respectively, ~~wherein~~ the formation of the third luminescent layers ~~is~~ being carried out by a coating method.

34. (Amended) The method as claimed in claim 32, ~~wherein~~ the first, second and third colors are red, green and blue, respectively.

35. (Amended) The method as claimed in claim 33, ~~wherein~~ the first, second and third colors are red, green and blue, respectively.

36. (Amended) An organic EL ~~element~~device, comprising:

a ~~transparent~~ substrate;

~~pixel~~ first electrodes provided on or above the transparent substrate, said ~~pixel~~ first electrodes include first ~~pixel~~ first electrodes, second ~~pixel~~ first electrodes and third ~~pixel~~ first electrodes that are arranged in a predetermined order;

first, second and third luminescent layers respectively formed on or above the first, second and third predetermined ~~pixel~~ first electrodes, in which said first, second and third luminescent layers have first, second and third colors, respectively, and are made of first, second and third organic compounds, respectively, ~~wherein~~ at least the first luminescent ~~layers are~~ layer defining a lower surface facing the first electrodes and being formed on or above the ~~respective~~ first ~~pixel~~ first electrodes by patterning by means of an ink-jet system so that thus formed first luminescent ~~layers~~ layer can be used as a final pattern in which the respective first luminescent layers on or above the ~~respective~~ first ~~pixel~~ first electrodes have a predetermined shape and are arranged in a predetermined order, such that the disposition of the lower surface of the first luminescent layer remains static relative to the first electrodes subsequent to the luminescent layer being formed by the ink-jet method and at least until a method of manufacturing the organic EL device is complete; and

a ~~counter~~ second electrode formed on or above the luminescent layers.

37. (Amended) The organic EL ~~element~~ device as claimed in claim 36, ~~wherein~~ the formation of said second luminescent ~~layers is~~ layer being performed by means of the ink-jet system so that thus formed second luminescent layers can be used as a final pattern in which the respective luminescent ~~layers~~ layer on or above the respective second ~~pixel~~ first electrodes have substantially a predetermined shape and are arranged in a predetermined order.

38. (Amended) The organic EL ~~element~~ device as claimed in claim 36, ~~wherein~~ the formation of the third luminescent ~~layers is~~ layer being carried out by the ink-jet system.

39. (Amended) The organic EL ~~element~~ device as claimed in claim 36, ~~wherein~~ the formation of the third luminescent ~~layers is~~ layer being carried out by a coating method.

40. (Amended) The organic EL ~~element~~ device as claimed in claim 36, ~~wherein~~ the first, second and third colors ~~are~~ being red, green and blue, respectively.